COMBINATION SPEEDOMETER/TACHOMETER GAUGE KIT

GENERAL

is03400

U.S. Department of Transportation

National Highway Traffic Safety Administration

Title 49, United States Code, Subtitle VI. Motor Vehicle and Driver Programs,

Part C. Information, Standards, and Requirements,

Chapter 327. Odometers

Section 32703. Preventing tampering

A person may not —

(1) advertise for sale, sell, use, install, or have installed, a device that makes an odometer of a motor vehicle register a mileage different from the mileage the vehicle was driven, as registered by the odometer within the designed tolerance of the manufacturer of the odometer;

(2) disconnect, reset, alter, or have disconnected, reset, or altered, an odometer of a motor vehicle intending to change the mileage registered by the odometer;

(3) with intent to defraud, operate a motor vehicle on a street, road, or highway if the person knows that the odometer of the vehicle is disconnected or not operating; or

(4) conspire to violate this section or section 32704 \ or 32705 of this title.

Section 32704. Service, repair, and replacement

(a) Adjusting mileage. A person may service, repair, or replace an odometer of a motor vehicle if the mileage registered by the odometer remains the same as before the service, repair, or replacement. If the mileage cannot remain the same —

(1) the person shall adjust the odometer to read zero; and

(2) the owner of the vehicle or agent of the owner shall attach a written notice to the left door frame of the vehicle specifying the mileage before the service, repair, or replacement and the date of the service, repair, or replacement.

(b) Removing or altering notice. A person may not with intent to defraud, remove or alter a notice attached to a motor vehicle as required by this section.

Section 32705. Disclosure requirements on transfer of motor vehicles

(a) (1) Disclosure requirements. Under regulations prescribed by the Secretary of Transportation that include the way in which information is disclosed and retained under this section, a person.transferring ownership of a motor vehicle shall give the transferee the following written disclosure:

(A) Disclosure of the cumulative mileage registered on the odometer.

(B) Disclosure that the actual mileage is unknown if the transferor knows that the odometer reading is different from the number of miles the vehicle has actually traveled.

(2) A person transferring ownership of a motor vehicle may not violate a regulation prescribed under this section or give a false statement to the transferee in making the disclosure required by such a regulation.

(3) A person acquiring a motor vehicle for resale may not accept a written disclosure under this section unless it is complete.

(4)

(A) This subsection shall apply to all transfers of motor vehicles (unless otherwise exempted by the Secretary by regulation), except in the case of transfers of new motor vehicles from a vehicle manufacturer jointly to a dealer and a person engaged in the business of renting or leasing vehicles for a period of 30 days or less.

(B) For purposes of subparagraph (A), the term “new motor vehicle” means any motor vehicle driven with no more than the limited use necessary in moving, transporting, or road testing such a vehicle prior to delivery from the vehicle manufacturer to a dealer, but in no event shall the odometer reading of such vehicle exceed 300 miles.

(5) The Secretary may exempt such classes or categories of vehicles as the Secretary deems appropriate from these requirements. Until such time as the Secretary amends or modifies the regulations set forth in 49 CFR 580.6, such regulations shall have full force and effect.

Figure 1. Title 49, United States Code

Many Harley-Davidson® Parts & Accessories are made of plastics and metals which can be recycled. Please dispose of materials responsibly.

GENERAL (CONTINUED)

Table 1. Speedometer Features Available

Models	Features					
	Gear Indicator	Trip B	Fuel Level	Range	Clock	Colored Backlighting
Dyna®						
2004-2007	-	Yes[1]	Yes[1]	-	Yes[1]	Yes[1]
2008	Yes[1]	Yes	Yes[1]	-	Yes[1]	Yes[1]
2009-2011	Yes[1]	Yes	Yes[1]	Yes	Yes	Yes[1]
Softail® (Except FLSTSE)						
2004-2007	-	Yes[1]	Yes[1]	-	Yes[1]	Yes[1]
2008-2010	Yes[1]	Yes	Yes[1]	Yes	Yes	Yes[1]
Road King® (Except FLHRSE3 and FLHRSE4)						
2004-2007	-	Yes[1]	Yes[1]	-	Yes[1]	Yes[1]
2008-2013	Yes[1]	Yes	Yes[1]	Yes	Yes	Yes[1]
Notes: [1] New functionality						

Kit Numbers

Table 2. Kit Numbers

Kits	Description
70900070B	Gauge, Speedo/Tach, MPH
70900071A	Gauge, Speedo/Tach, KMH
70900072A	Gauge, Speedo/Tach, MPH/KMH

Models

For model fitment information, see the P&A Retail Catalog or the Parts and Accessories section of www.harley-davidson.com (English only).

Service Manual Required

⚠WARNING

The rider's safety depends upon the correct installation of this kit. Use the appropriate service manual procedures. If the procedure is not within your capabilities or you do not have the correct tools, have a Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00333a)

NOTE

This instruction sheet refers to service manual information. A service manual for this year/model motorcycle is required for this installation. One is available from a Harley-Davidson dealer.

Kit Contents

This kit contains a combination speedometer/tachometer and an adapter harness. There are no service parts available with this kit.

COPY ODOMETER DATA

NOTE

The gauge displays NO CAL (no calibration). It will not function if it is installed before the odometer copying process is performed.

1. Verify that the engine OFF/RUN switch is in the RUN position.
2. Turn the ignition switch to the ACCY position and note the odometer reading.
3. Turn ignition switch OFF.
4. See the service manual and Figure 2. Locate data link connector [91].
5. Remove the rubber plug from the data link connector [91]. Install the 4-way connector of the adapter harness from the kit.
6. Install the 12-way connector of the adapter harness to the new gauge. Hold the gauge during the copying process.

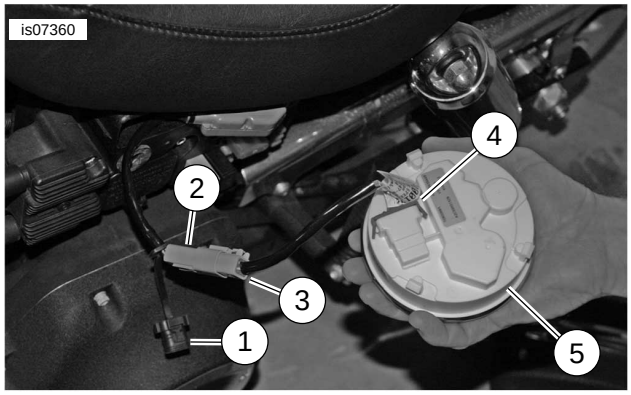
NOTE

If odometer copy process is done repeatedly in a short time span, it displays the percentage countdown, CHECK and OK. Refer to Troubleshooting Guide (Table 4).

The display could be difficult to read in low light conditions.

7. Turn ignition switch ON.

   See Figure 3. The gauge rapidly displays the percentage of copying complete. Then the gauge displays CHECK and finally OK. When OK displays, the copying process is successful.
8. Turn ignition switch OFF.
9. Disconnect the adapter harness from the data link connector [91] and the gauge. Install rubber plug.



1. **Rubber plug**
2. **Data Link Connector [91]**
3. **4-Way adapter harness connector**
4. **12-Way adapter harness connector**
5. **Speedometer**

Figure 2. Connect Speedometer to Copy Odometer Data

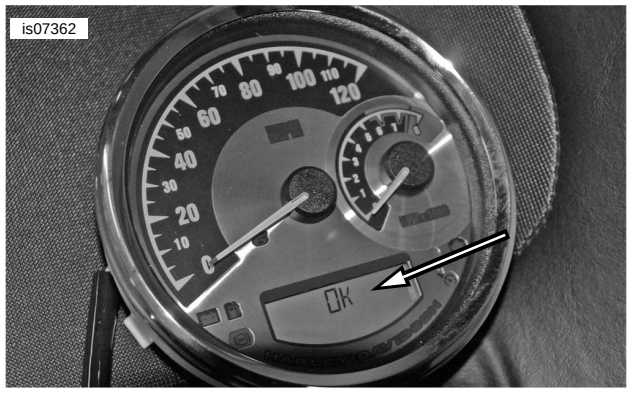


Figure 3. Speedometer Gauge Displaying "OK"

INSTALLATION

⚠WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, remove main fuse before proceeding. (00251b)

1. See the service manual. Remove seat and main fuse.

NOTE

Cover painted parts to protect finish.

2. See the service manual. Remove the instrument console from the fuel tank. Place an H-D Service Cover or clean shop towels on the fuel tank. Turn the instrument console upside down and lay it on the covering.
3. See the service manual. Remove the original equipment (OE) speedometer. Install the new speedometer.
4. See the service manual. Install the instrument console to the fuel tank.

⚠WARNING

After installing seat, pull upward on seat to be sure it is locked in position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070b)

NOTE

When the main fuse is installed and battery power is applied to the electrical system, the security light flashes for up to 15 seconds, while the new gauge synchronizes to the ECM.

5. See the service manual. Install the main fuse seat.

⚠WARNING

Be sure headlamp, tail and stop lamp and turn signals are operating properly before riding. Poor visibility of rider to other motorists can result in death or serious injury. (00478b)

6. Turn the ignition switch to IGN, but do not start the motorcycle. Check operation of all lamps.
7. Check the speedometer and tachometer for proper operation and verify that the odometer reading is correct.

NOTES

- *The replacement speedometer will become locked to the ECM after 31.1 miles (50 km) have been accumulated. The trip B odometer displays the countdown mileage. Once the countdown reaches zero, the speedometer is locked to the ECM. If installed on another vehicle the odometer displays "VIN ERR". If the speedometer is removed from the vehicle before the countdown reaches zero, it has not been locked to the ECM. This mileage countdown allows for a road test to verify that speedometer replacement was the proper repair.*
- *The 31.1 miles (50 km) countdown period (before the speedometer is locked to the ECM), the security light flashes for up to 15 seconds when battery power is restored to the electrical system, while the new gauge synchronizes to the ECM.*
- *Gear Indication display is a calculated gear position based on wheel and engine speed. The gear position displayed could be momentarily inaccurate depending on rider clutch use characteristics and clutch wear. This momentary false reading, although unlikely, can occur if the clutch is allowed to slip either due to excessive wear, poorly adjusted clutch or if the operator rides the clutch.*
- *If gauge is installed on a motorcycle with ABS, verify that the ABS warning lamp is working properly. See the owner's manual for ABS warning lamp operation.*
- *The odometer will display VIN ERR and the ABS warning lamp will illuminate if the gauge is installed on a non-ABS vehicle after the gauge is locked (accumulated 31.1 miles (50 km)) into an ABS vehicle.*
- *2007 and earlier vehicles do NOT support the gear indicator display function.*

Battery Reconnection and Initialization

After the battery is reconnected or a new gauge is installed, the gauge requires about a half tank of fuel to initialize fuel range (miles to empty) functionality.

During consumption of the first full tank of fuel, the gauge software begins the process of learning your riding patterns, eventually tailoring the fuel range calculations to your unique riding characteristics.

The fuel level display and tank-mounted fuel gauge may not always match when starting with a full tank of fuel. The tank

fuel gauge utilizes a continuous sweep needle to indicate fuel level, while the speedo/tach fuel level utilizes a segmented display. Each segment represents 1/8 of a tank. For example; if a given segment just came on or is about to go off, it would show no change, while the needle on the tank-mounted gauge would likely show a change in position.

Fuel Fill-up and Top-off

When adding fuel, it is recommended you add at least 2 gallons of fuel to update the fuel and range displays. If the fuel display does not update immediately after the vehicle is put in motion the fuel and range displays will slowly update over the next 30 miles.

Press and hold the "Trip" reset switch to toggle between the "mile" and "kilo" displays.

DISPLAY MODIFICATION

The backlight color can be modified for the entire gauge or the dial, speedometer pointer, tachometer pointer, and display separately. The gear indication and fuel level display can also be disabled.

Fuel Level Display

1. See Figure 4. Press and hold the trip reset button. Turn ignition switch to ACC. Then release the trip reset button. The gauge displays "SETUP" and shows the fuel level display.
2. Turn ignition switch OFF. Turn switch back to ACCY to toggle the fuel level display from ON to OFF.
3. Press the trip reset button to toggle to the next display control **or** turn the ignition switch to OFF or IGN to return to normal operation and save the setting.

Figure 4. Fuel Level Display Setup

Gear Indicator Display

1. Press and hold the trip reset button. Turn ignition switch to ACC. Then release the trip reset button. The gauge displays "SETUP" and shows the gear indicator display.
2. Press the trip reset button to toggle through different displays until the gear indicator function is selected. The gauge displays SETUP and shows the full range of gear numbers ("1" through "5" or "6").
3. Turn ignition switch OFF. Turn the switch back to ACCY to toggle the gear indicator display from ON to OFF.
4. Press the trip reset button to toggle to the next display control **or** turn the ignition switch to OFF or IGN to return to normal operation and save the setting.

Backlight Brightness

1. Press and hold the trip reset button. Turn ignition switch to ACC. Then release the trip reset button. The gauge displays "SETUP" and shows the fuel level display.
2. Press the trip reset button to toggle through different displays until the brightness function is selected. The gauge displays SETUP BRIGHT and shows the full range of gear numbers (1-6).
3. Turn the ignition switch quickly to OFF and then back to ACCY to toggle between BRIGHT and DIM settings.
4. Press the trip reset button to toggle to the next display control **or** turn the ignition switch to OFF or IGN to return to normal operation and save the setting.

Clock Adjustment

1. To adjust clock on gauge, toggle to the clock display.
2. Press and hold trip reset button. Choose 12-hour or 24-hour clock by pressing and holding trip reset button.
3. The hours flash. Press trip reset button quickly to adjust to desired time. Press and hold trip reset button.
4. The minutes flash. Press trip reset button quickly to adjust to desired time. Press and hold trip reset button.
5. AM or PM flash. Press trip reset button to select. Press and hold trip reset button.

Display Color

1. Press and hold the trip reset button. Turn ignition switch to ACC. Then release the trip reset button. The gauge displays "SETUP" and shows the fuel level display.
2. Press the trip reset button to toggle through different displays until the display color function is selected. The gauge displays COLOR ALL (changes all display colors at once), DIAL (changes backlight color for tachometer and speedometer), LCD (changes backlight color for LCD display), speedometer (changes speedometer needle color) or tachometer (changes tachometer needle color).
3. Turn ignition switch OFF. Turn switch back to ACCY. The gauge displays the color number of the current color.
4. See Table 3 and Figure 5. Press and hold the trip reset button to **quickly** cycle through the colors. Release the trip reset button to stop cycling through the colors.

   or

   Press and release the trip reset button repeatedly to **slowly** cycle through the colors.
5. Turn ignition switch OFF. Turn the switch back to ACCY to save the color. The gauge displays SAVED and returns to the display color select menu.
6. Turn the ignition switch to OFF or IGN to return to normal operation.

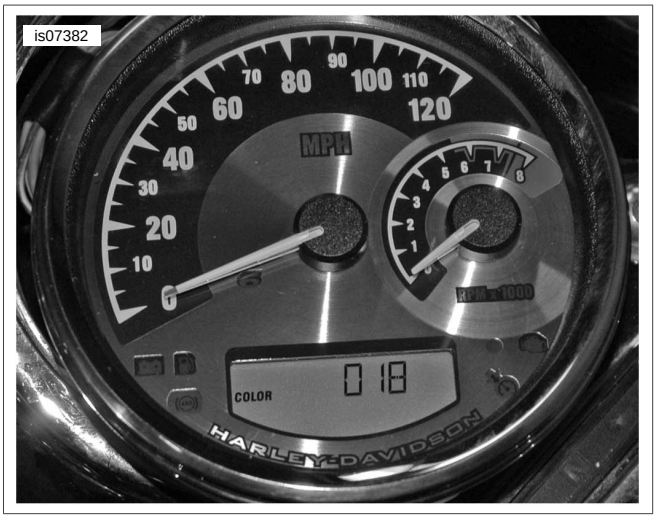


Figure 5. Select Display Color

Table 3. Color Guide

Number	Range Color
000-015	Red
016-030	Amber (Orange)
031-060	Yellow
061-100	Yellow/Green
101-180	Green
181-250	Green/Blue
251-350	Blue
351-380	Blue/Violet
381-440	Violet
441-490	Pink
491-525	Red
526-600	White/Light Colors
Note: Color descriptions and color ranges are approximate.	

Table 4. Troubleshooting

Operation	Problem	Possible Cause	Possible Solution
Copying odometer data	Gauge does not display percentage, "check", and "ok".	Gauge has already conducted odometer copy process or the gauge might not have power.	Install gauge and confirm functionality.
Copying odometer data	Gauge does not display percentage, "check", and "ok".	Vehicle ignition switch not in "ign" position.	Turn to "ign".
Copying odometer data	Gauge does not display percentage, "check", and "ok".	Vehicle run/stop switch not in "run" position.	Turn to "run".
Copying odometer data	Gauge starts percentage but does not complete.	Gauge lost communication to vehicle bus (electrical system) or gauge not compatible with vehicle (incorrect fitment or model year).	Turn vehicle ignition switch to "off" and run/stop switch to "stop", wait 15 seconds, and retry.
Copying odometer data	Gauge reads "no cal" or vin err" before starting countdown.	Normal software functionality.	None needed. Confirm that the gauge displays percentage, "check" and "ok." The gauge is functioning properly.
Installation into vehicle harness	LCD states "no cal".	Gauge did not conduct copy odometer process.	Conduct copy odometer process in i-sheet.
Installation into vehicle harness	LCD states "vin err".	Gauge was already "married" (accumulated 31.1 miles (50 km)) to another vehicle.	Reinstall on previous vehicle to confirm no "vin err".
Entering set up mode	Will not go to set up mode.	Loose connection with gauge connector or trip reset button.	Check for bent accessory pin #6 in gauge connector or check trip reset button operation.
Gear Indication	Gear Indication does not operate.	Not turned on.	Use instruction sheet to turn on gear indication in set up mode.
Gear Indication	Gear Indication does not operate.	Vehicle is 2007 or earlier.	N/A
Fuel Level	Fuel Level does not operate.	If Sportster check for proper install of fuel sender.	Use instruction sheet for proper install.
Color Changing	Color will not save.	Color was not saved properly.	Use instruction sheet for proper saving procedure.
Note: Please contact Technical Service with any installation or troubleshooting questions before filing a warranty claim.			